



## Market Rule Amendment Submission

Please complete the first four parts of this form and submit the completed form by email or fax to the following:

Email Address: [Rule.Amendments@theIMO.com](mailto:Rule.Amendments@theIMO.com)

Fax No.: (416) 506-2847 Attention: Market Rules Group

**Subject:** *Market Rule Amendment Submission*

All information submitted in this process will be used by the *IMO* solely in support of its obligations under the "Electricity Act, 1998", the "Ontario Energy Board Act, 1998", the "Market Rules" and associated policies, standards and procedures and its licence. All submitted information will be assigned the confidentiality classification of "public" upon receipt. You should be aware that the *IMO* will *publish* this *amendment submission* if the Technical Panel determines it warrants consideration and may invite public comment.

Terms and acronyms used in this Form that are italicized have the meanings ascribed thereto in Chapter 11 of the "Market Rules".

### PART 1 – SUBMITTER’S INFORMATION

Please enter contact information in full

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(if applicable) <i>Market Participant / Metering Service Provider No.</i> <sup>1</sup> :	<i>Market Participant Class:</i>
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### PART 2 – MARKET RULE AMENDMENT SUBMISSION INFORMATION

Subject: Data, Scheduling, Dispatch and Prices		
Title: Aggregation Treatment of Combined Cycle Generation Facilities		
Nature of request (please indicate with X on the right): Alteration      Deletion      Addition - <b>X</b>		
Clarification		
Chapter: 7 and 11 (definition) Appendix:		Sections: 2.2
Sub-sections proposed for amending/clarifying : 2.2.3A		

<sup>1</sup> This field is restricted to a maximum of 12 characters and does not allow any spaces or underscore.

### PART 3 – DESCRIPTION OF THE ISSUE

Provide a brief description of the issue and reason for the proposed amendment. If possible, provide a qualitative and quantitative assessment of the impacts of the issue on you and the *IMO-administered markets*. Include the Chapter and Section number of the relevant market rules.

Combined cycle generation *facilities* are conceived, designed and built to operate as integrated *facilities*, and must therefore be able to offer, be dispatched, and be settled in the *IMO* market as single entities. The operation of steam turbine *generators* is dependent on that of combustion turbine *generators*. This feature is quite independent of electrical connection arrangements. Present *market rules* allow the *IMO* to preclude commercial operation (offer, dispatch, settlement) as integrated *facilities* and the *IMO* discretion in addressing aggregation was removed as part of the changes to waiver/*exemption* provisions. It is therefore necessary to change the *market rules* to recognize the reality that combined cycle *facilities* are single entities, and cannot be disaggregated into component *generation units*.

The rationale for the proposed rule change is summarized below.

Combined cycle generation *facilities* generate electricity in combustion turbine (or reciprocating engine) *generators*, and in steam turbine *generator(s)*. The combustion turbine *generators* are subject to direct control. The steam turbine *generator(s)* are driven by steam that is generated by heat recovery from the combustion turbine exhaust. Steam turbine *generator* output is therefore dependent on the level of output of the combustion turbines, and is not generally subject to independent control except in emergency situations.

Large combined cycle *facilities* are required to be connected to the *IMO-controlled grid* through at least two circuits. The *generation units* may be hard-wired to separate circuits, or they may be connected through switchyards in order to provide increased flexibility. Some *facilities* may include only limited switching capability. The two transmission circuits may not both terminate on the same network bus, thereby opening the question of whether the two circuits represent a single *connection point* (even though there is only a single transmission *connection agreement*).

Smaller *facilities* may be connected through a single circuit, or may be connected (for past or present reasons) through two circuits, with or without switchyards.

Examples of all of these connection arrangements can be found amongst existing and proposed combined cycle *facilities*, and additional illustrative information can be provided if necessary. The range of arrangements proposed for new *facilities* can be seen in the *IMO connection assessment* reports available on the *IMO* website.

As a result of the twin circuit connection arrangements, and as noted by *IMO* staff following a *Technical Panel* meeting the present *market rules* do not respect the integrity of combined cycle *facilities* as single entities. In order to respect this basic design philosophy of combined cycle *facilities*, it is essential that they be treated as single entities, particularly with respect to *offers*, *dispatch* and *settlement*.

In the past, it has been suggested and hoped that *IMO* discretion in exercise of aggregation rules would provide a mechanism to address these issues individually, and to build up the “case law” on the subject. But the removal of such discretion in the revision to the waiver rules forces us to address this issue

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directly at this time. Hence the need for a rule change to recognize the particular and fundamental requirement that combined cycle *facilities* be treated as single entities.

At the same time, it is recognized that the *IMO* needs access to sufficient data to manage the system for *reliability*. At the operational level, this is provided through the existing rules for monitoring of *generation facilities*. For modeling purposes, it may be necessary for participants to provide, in certain circumstances, additional data with respect to planned operating regimes, which would need to be coordinated with switching plans. The detail of the requirements will need to be established by *IMO* staff closely familiar with the real system *reliability* requirements, as well as the *IMO* system modeling and its requirements.

**PART 4 – PROPOSAL (SUBMITTER’S)**

Provide your proposed amendment. If possible, provide suggested wording of proposed amendment.

**The proposed *market rule* amendments listed below are those of the submitting party.**

In chapter 7, add new section 2.2.3.A

- a.) The *IMO* shall approve an application for registration of a *combined cycle generation facility* as a single *registered facility* if it meets the requirements of section 2.2.3.
- b.) In approving the registration of a *combined cycle generation facility* which would not fulfill all the normal requirements for facility aggregation, the *IMO* may specify certain additional information which it requires in order to maintain system reliability.

In section 11, add new section 1.1.1.36.A

*Combined cycle generation facility* means a *generation facility* in which electricity is generated by one or more combustion turbines or engines, and by one or more steam turbines for which steam is supplied by recovery of waste heat from one or more of the combustion turbines or engines.

**PART 5 – FOR *IMO* USE ONLY**

<b>Rule Amendment Submission Acceptance Information</b>	
MR number: MR-00121-Q00	
Date submitted to <i>Technical Panel</i> :	
Accepted by Technical Panel as: General - <input checked="" type="checkbox"/> Urgent Minor (please indicate with X on the right)	Date: June 19, 2001 and July 11, 2002
Criteria for acceptance: <ul style="list-style-type: none"> <li>Identifies impediments to, or means to enable, operations and market coordination with <i>market rules</i> and practices;</li> <li>Identifies means to better enable the market to satisfy the market design principles;</li> <li>Identifies ways to simplify the market and/or reduce participant or <i>IMO</i> costs; and</li> <li>Expected or perceived benefits of the amendment exceed the expected or perceived costs of implementation.</li> </ul>	
Priority: High	
Criteria for assigning priority: <ul style="list-style-type: none"> <li>Pervasiveness of the problem: the extent to which an issue is adversely affecting a number of market participants, the extent of the adverse impact on the affected participants, and the likely duration of the problem (i.e., is it transitory, or will it persist).</li> </ul>	
Not accepted (please indicate with X):	
Clarification/interpretation required (please indicate with X):	
<i>Technical Panel</i> minutes reference: IMOTP 107-1	

**PART 5 – FOR IMO USE ONLY***Technical Panel Comments:*

The *Technical Panel* decided this amendment submission warrants further consideration.

The *Technical Panel* accepted the *IMO's* initial assessment that aggregation across different electrical connection points will not allow the *IMO* to perform *security* assessments based on a single *bid* or *offer*. If the *IMO* were unable to perform *security* assessments, then the *IMO* would be unable to fulfill certain objectives under the *Electricity Act, 1998*. Further, multiple simultaneous injection points associated with a single aggregated *energy offer* cannot be handled by the *IMO's* Market Operations System (MOS) Dispatch Scheduling Optimization (DSO) tool.

The *Technical Panel* recognized that changing *IMO* systems (e.g. *reliability* modeling and *dispatch-schedule* optimization program) to permit the aggregation would be an expensive and lengthy task, and therefore the submitted proposal (refer to Part 4) may not be the optimal solution.

The *Technical Panel* initially considered the amendment in 2001, but resolution of the issue was judged not to be critical to the start of the market. At that time, the *Technical Panel* sought and received input from selected stakeholders. The *Technical Panel* and the *IMO* are developing a proposal, taking into account that input. The proposal is intended to have broader application to dispatchable *facilities* and not just to combined cycle generation *facilities*. The *Technical Panel* will be publishing that proposal for *market participant* and stakeholder review and comment in the near future.